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POLYNOMIAL INEQUALITIES IN REGIONS WITH CUSPS

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In this talk, we investigate the order of growth of the modulus of an arbitrary algebraic polynomials in the weighted Lebesgue space, where the contour and the weight functions have some singularities. In particular, we obtain pointwise Berstein-Walsh-type estimation for algebraic polynomials in the bounded and unbounded regions with piecewise smooth and quasi-smooth boundary having exterior and interior zero angles at the finite number boundary of points.

Keywords: algebraic polynomials, weighted Lebesgue space, Berstein-Walsh-type estimation.

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APPROXIMATION INEQUALITIES IN WEIGHTED ORLICZ SPACES

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In this work some Jackson-Stechkin type direct theorems of trigonometric approximation are proved in Orlicz spaces, generated by a quasiconvex function, with weights satisfying some Muckenhoupt's Ap condition. To obtain a refined version of the Jackson type inequality we prove an extrapolation theorem, Marcinkiewicz multiplier theorem and Littlewood-Paley type results. By means of a realization result we find an equivalence between the fractional order weighted modulus of smoothness and the classical weighted Peetre's K-functional.

Keywords: approximation inequalities, Orlicz spaces.

References

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